

## Method and Apparatus for Determining Power Allocation in a MIMO Communication System

In a MIMO communication system (100) with limited power for each antenna, a method, apparatus and a processor (420) provide for determining bin energy level allocation to each OFDM frequency bin at each transmit antenna. An estimate of a solution vector including elements of the allocation bin energy level to each OFDM frequency bin at each antenna is determined. An error function based on the determined solution vector is also determined. An error magnitude is determined based on the determined error function. The error magnitude is compared to an error threshold. The processor (420) accepts the estimate of the solution vector with the elements of the allocation bin energy level when the error magnitude is less than the error threshold.